

What is claimed is:

1. A clad resin composition for optical fiber or waveguide comprising: (A)

40-95 parts by weight of a photopolymerizable acrylate derived from a mixture

5 composed of 5-90% by weight of a polyol copolymer, 20-40% by weight of an

acid anhydride, 5-50% by weight of a (meth)acrylate alcohol, 0.01-1% by

weight of a condensation catalyst and 0.01-1% by weight of a polymerization

inhibitor, (B) 5-60 parts by weight of a photopolymerizable monomer; (C)

0.5-20 parts by weight of a photopolymerization initiator and (D) 0.1-5 parts

10 by weight of a leveling or antifoaming agent.

2. The composition of claim 1, wherein the polyol copolymer(i) has an

average molecular weight ranging from 50 to 10000, and comprises as a

repeating unit (a) fluorinated polyol copolymer having -CF₂CF₂- or -CF₂CF₂O-,

15 (b) polydimethylsiloxane (PDMS) polyol copolymer having -Si(CH₃)₂O- or (c)

hydrocarbon polyol copolymer having -CH₂CH₂O- or -CH₂CH(CH₂CH₃)O-.

3. The composition of claim 2, wherein the fluorinated polyol copolymer

is selected from the group consisting of 1H,1H,9H-hexadecafluorononanol,

20 hexafluoro-2-methylisopropanol, 1,1,1,3,3,3-hexafluoro-2-propanol,

hexafluoro-2-(p-tolyl)isopropanol, 4,5,5,6,6,6-hexafluoro-4-(trimethyl)-1-

hexanol, 4,5,5,6,6,6-hexafluoro-4-(trifluoromethyl)-2-hexene-1-ol,

3,3,4,4,5,5,6,6-octafluoro-1,6-hexanediol, 1H,1H,5H-octafluoro-1-pentanol,

1H,1H-pentadecafluoro-1-octanol, 2,3,4,5,6-pentafluorobenzyl alcohol,

- 20 -

pentafluorobutanol-2, 4,4,5,5,5-pentafluoropentanol, pentafluoropropionaldehyde hydrate and a mixture thereof.

4. The composition of claim 2, wherein the polydimethylsiloxane polyol copolymer is selected from the group consisting of 1,3-bis(hydrobutyl)tetramethyldisiloxane, 1,4-bis(hydropropyl)tetramethyldisiloxane, diphenylsilanediol and a mixture thereof.

5. The composition of claim 2, wherein the hydrocarbon polyol copolymer is selected from the group consisting of polyester polyol, polyether polyol, polycarbonate polyol, polycaprolactone polyol and tetrahydrofuran propyleneoxide ring opening copolymer.

6. The composition of claim 1, wherein the acid anhydride(ii) is selected from the group consisting of (+)-diacetyl-L-tartaric anhydride, (2-nonen-1-yl)succinic anhydride, acetic anhydride-d₆, 1,2,4-benzenetricarboxylic anhydride, (R)-(+)-2-acetoxysuccinic anhydride, (S)-(+)-2-acetoxysuccinic anhydride, (S)-(-)-1,2,3,4-tetrahydro-2,3-isoquinolinedicarboxylic anhydride, 1,2-cyclohexanedicarboxylic anhydride, 1,2-cyclohexanedicarboxylic anhydride, 1,3-cyclopentanedicarboxylic anhydride, 1-cyclopentane-1,2-dicarboxylic anhydride, 1-propanephosphonic acid cyclic anhydride, 2,2-dimethylsuccinic anhydride, 2,4,6-trimethylbenzoic anhydride, 2,6-diphenyl-4-pyrininecarboxylic anhydride, 2-(1-octadecenyl)succinic anhydride, 2-ethylbutylic anhydride,

- 21 -

2-octadecylsuccinic anhydride, 2-bromo-5-norbornene-2,3-dicarboxylic anhydride, 2-ethyl-3-propylacrylic anhydride, 2,3,4,5,6-pentafluorobenzoic anhydride and a mixture thereof.

5 7. The composition of claim 1, wherein the (meth)acrylate alcohol(iii) is selected from the group consisting of 2-hydroxyethyl(meth)acrylate, 2-hydroxypropyl(meth)acrylate, 2-hydroxybutyl(meth)acrylate, 2-hydroxyethylacrylate, 2-hydroxypropylacrylate, 2-hydroxy-3-phenyloxypropyl(meth)acrylate, 4-hydroxybutylacrylate, neopentylglycomono(meth)acrylate, 10 4-hydroxycyclohexyl(meth)acrylate, 1,6-hexanediolmono(meth)acrylate, pentaerythritolpenta(meth)acrylate, dipentaerythritolpenta(meth)acrylate and a mixture thereof.

15 8. The composition of claim 1, wherein the condensation polymerization catalyst is selected from the group consisting of triethylamine(TEA), dimethylaniline, N,N-dimethylaniline, dimethylphosphine, cobaltacetyl acetate, barium naphthate, calcium naphthate, cobalt naphthate, manganese naphthate and a mixture thereof.

20 9. The composition of claim 1, wherein the polymerization inhibitor is selected from the group consisting of hydroquinone, hydroquinonemonomethyllether, para-benzoquinone, phenotiazine and a mixture thereof.

- 22 -

10. The composition of claim 1, wherein the photopolymerizable monomer(B) includes a fluorinated and hydrocarbon monomer, and said fluorinated monomer is selected from the group consisting of pentafluorobenzyl acrylate, 1H,1H-pentafluoropropyl(meth)acrylate2-(perfluorodecyl)ethyl acrylate, 3-(perfluorohexyl)-2-hydroxypropyl acrylate, 2-(perfluoro-3-methylbutyl)ethyl acrylate, 3-(perfluoro-3-methylbutyl)-2-hydroxypropyl methacrylate, 2-(perfluoro-9-methyldecyl)ethyl methacrylate, 3-(perfluoro-8-methyldecyl)-2-hydroxypropyl methacrylate, 2-(perfluoro-5-methylhexyl)ethyl(meth)acrylate and a mixture thereof and the hydrocarbon monomer is selected from the group consisting of phenoxyethylacrylate, phenoxydiethyleneglycolacrylate, phenoxytetraethyleneglycolacrylate, phenoxyhexaethyleneglycolacrylate, isobornylacrylate(IBOA), isobornylmethacrylate, N-vinylpyrrolidone(N-VP), ethoxylated phenol monoacrylate, polyethylene glycol 200 diacrylate, tripropylene glycol diacrylate, trimethylopropane triacrylate(TMPTA), polyethyleneglycol diacrylate, ethyleneoxide added trimethylopropanetriacrylate(Eo-TMPTA), pentaerythritol tetraacrylate(PETA), 1,4-butandiol diacrylate, 1,6-hexandiol diacrylate, ethoxylated pentaerythritol tetraacrylate, 2-phenoxyethyl acrylate, ethoxylated bisphenol A diacrylate and a mixture thereof.

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11. The composition of claim 1 further comprising antioxidants in an amount of from 0.1 to 5 parts by weight.